

ABSTRACT

A fully biodegradable fibre reinforced composite adapted for use as a medical implant which is shaped and processed by means of a resin reaction injection transfer molding process adapted for predetermining shape, physical properties and degradation profile, shaped preform and/or composition for preparation of the shaped composite, process for the production of the shaped composite comprising obtaining a shaped preform and impregnating with resin with simultaneous processing thereof, shaped composite comprising thermoplastic matrix and fibres adapted for use as a medical implant, characterised by a differential degradation of matrix with respect to fibres adapted to degrade via an intermediate shaped structure comprising residual porous matrix or residual fibre form respectively and selection of composite is made for primary growth of a preferred cell type, throughout voids created by degraded matrix or fibre respectively, according to the desired healing or reconstruction locus, the shaped composites for use as an implant in surgical reconstruction, preferably for use in reconstructive surgery of bone or in reconstructive surgery of cartilage and/or meniscus selected from cranial, maxillofacial and orthopaedic surgery for the purpose of fixation, augmentation and filling in of defects, and method for the production of a shaped product comprising preparation of set sizes, shapes and configurations, eg plates, screws, rivets and other fixation devices according to a 3 dimensional template wherein the template is obtained by means of preparing a 3 dimensional image of a selected feature or area for implant, generating a mold as hereinbefore defined, selecting fibre and matrix for preparation of a composite, preparing a fibre preform by introducing fibre into the mould in an effective amount and arrangement, injecting matrix and catalyst and processing thereof with subsequent removal of the mold.